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ABSTRACT

Students enrolled in a graduate level social work class offered through distance education were encouraged to use e-mail and a class listserv. Analysis of the sources and content of course-related electronic transmissions revealed that distant students were significantly more likely than on-campus students to use e-mail and a course listserv. Students used the technology most often for practical reasons, such as asking for clarification of course expectations or requesting exam results. They seldom used the listserv for extended discussions of course content or related topics. In responses to a survey about their use of computer-mediated communication (CMC), students reported significant increases in self-assessed competence and expressed positive opinions about these technological supports. A table presents data on the topics of student messages. (Contains 17 references.) (Author/MES)

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Student Use of Computer-Mediated Communication in a Distance Education Course

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Abstract: Students enrolled in a graduate level social work class offered through distance education were encouraged to used e-mail and a class listserv. Analysis of the sources and content of course-related electronic transmissions revealed that distant students were significantly more likely than on-campus students to use e-mail and a course listserv. Students used the technology most often for practical reasons, such as asking for clarification of course expectations or requesting exam results. They seldom used the listserv for extended discussions of course content or related topics. In responses to a survey about their use of computer-mediated communication (CMC) they reported significant increases in self-assessed competence, and expressed positive opinions about these technological supports.

1. Background

Distance education, defined as education or training courses delivered to off-campus sites via audio, video, or computer technologies, is being increasingly utilized in institutes of higher learning (The Department of Education, 1997). There were an estimated 753,640 students formally enrolled in distance education courses in the 1994-95 academic year. A third of higher education institutions reported offering some type of distance education courses, and another quarter planned to offer distance education within the next three years.

With an expansion in the use of this teaching modality, educators are searching for ways to reduce students' feelings of isolation by increasing interaction among students, and between students and instructors. Both students and faculty seem to prefer being able to interact directly with each other, and reportedly miss this convenience in distance education classes (Dillion, 1989; Fast, 1995). Studies suggest the value of learner-learner and learner-instructor interactions in distance education settings (McGiven, 1994; Wagner, 1993; Shale & Garrison, 1990). Learner-learner interaction may be the most challenging type of interaction to implement in distance education (Moore,1989). While students in traditional settings can easily interact with their instructor and peers, these same type of interactions must be carefully planned and structured by teachers of distance education (Parker, 1997). The use of computer-mediated communication (CMC), such as electronic mail (e-mail) and a class listserv in distance education courses are two ways to increase student interactions.

Computer-mediated communication has been used as an aid for distance education (Mason & Kaye, 1980; Romiszowki & de Haas, 1989) to foster a sense of community among students, encourage group interaction, and extend discussion beyond class time (Folaron, 1995; Karayan & Crowe, 1997; Latting, 1994), to facilitate or enhance student/instructor contact (D'Souza, 1991, 1992; Latting, 1994), and to simulate a debate (Flynn, 1987). Most instructors report successful experiences, with some notable exceptions (e.g., Latting, 1994). Flynn (1987) suggests that e-mail is particularly beneficial "in a learning environment populated by persons on the move who have a variety of competing commitments. Students today often commute large distances for education and training on a part-time basis or while holding down a full-time job. Traditional methods anchored in the classroom are insufficient" (p. 18). What he is describing, of course, is the typical student enrolled in a distance education class.

Rogers (9281) suggests that the successful diffusion of an innovation throughout a social system begs the question of whether it has desirable effects. He notes that studies of effectiveness are hindered by several factors: most researchers interested in the topic share a pro-innovation bias, that there is a tendency for diffusion research to side with the change agencies that promote innovations rather than with the audience of potential adopters, conventional attitude surveys fail to measure outcomes, and often consequences are confounded with other effects. Sliwa (1994) cautions instructors against the temptation to embrace all available technology without question. Instead, educators are encouraged to accept only those strategies that improve the quality of learning, and to carefully evaluate any technological tools they choose to use in the classroom. The emphasis must remain on

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effective teaching and learning. In accordance with this, the objectives of this study were to analyze the students' actual use of e-mail and the class listserv.

2. Study Setting and Methodology

The study was conducted in a graduate level social work program in a large public university in the southeastern United States. The study population consisted of 76 first year, part-time students enrolled in a distance education course during the spring 1998 semester. Thirty students attended class in a studio on campus and 46 attended at 12 other sites around the state. Distant students were required to be present on campus only three times: for the course introduction, the midterm exam, and the final exam. All but one of the students had been enrolled in two distance education courses the previous fall. The instructor of one of those courses used a listserv and also assigned "e-mail journal partners" to facilitate interaction between students.

The majority of the students were white (61%) and female (85%). Almost all were part-time students who held full-time jobs. There were no significant differences between the groups with respect to student enrollment status (full or part-time), work schedule (full or part-time), ethnicity, gender, or age.

The course was offered via two-way audio and one-way video instruction. Students at the distant sites could see the instructor on television monitors and could hear her and the students present in the studio. They could call in to the studio with questions and comments via an 800 number. The instructor could not see them.

The instructor used a class listserv to post her lecture outline and study questions every week. Ten percent of the semester grade for the course was based on class attendance and participation. Students could enhance their participation scores either by speaking up during class and/or by sending messages to the class listserv. The instructor offered no guidelines on what constituted an unacceptably low level of participation. The instructor provided students with information on how to reach her by phone as well as by e-mail.

The author was interested in how students used e-mail and the listserv within the context of the class or, specifically, whether there were any differences between the distant and campus students in their use of the class listserv and e-mail in these courses, and for what purposes the students used computer-mediated communication.

The author analyzed all computer-mediated communications related to the course that were sent by the students to the instructor via e-mail or the listserv. (E-mail transmissions exchanged directly between students were not available for analysis.) The texts of the transmissions were downloaded and printed in a single document totaling more than 650 pages. The transmissions were coded by source and sender, and by message content.

3. Findings

3.1 Sources and Senders of Transmissions

Of 369 transmissions generated by students, 274 (74%) came via individual e-mail to the instructor, and 95 (26%) were shared with the instructor and classmates via the listserv. Only 58 (15.7%) of the 369 transmissions came from campus students even though 39% of the students enrolled in the course attended class on campus. This was a statistically significant difference (chi square with 1 df = 86.9, p. < .001). Seventeen students sent no transmissions at all; 16 of those students attended class on campus. Another 11 students sent only one message each. Of the total 369 student transmissions, 264 (71.5% of the total) were sent by only 10 students, all of whom viewed the class from distant sites.

3.2 Topics

The manifest content of the students' messages was coded into 14 topic categories: logistics (e.g., requests for information about the class meetings, pleas for extensions on due dates), questions about the assignments (e.g., selecting a topic for the term paper), actual assignments (papers) sent via e-mail, requests for individual exam results and grade reports, problems with the listserv, problems with e-mail, comments related to class content, requests to classmates for assistance, sharing of information (about course-related events in the news or outside resources),

comments about that outside information, comments regarding the listserv in response to a request for input from the instructor, unsolicited comments and evaluative feedback offered to the course instructor and guest lecturers, and acknowledgment of messages

Topic code	Number and percent of all messages	Number and percent of all e-mail messages	Number and percent of all listserv messages
Class logistics	66 (17.0%)	50 (17.0%)	16 (16.6%)
Questions about assignments	31 (7.9%)	27 (9.2%)	4 (4.2%)
Assignment attached	35 (9.0%)	35 (11.9%)	0 (0.0%)
Requests for grades	79 (20.0%)	79 (27.0%)	0 (0.0%)
Problems with listserv	26 (6.7%)	22 (7.5%)	4 (4.2%)
Problems with e-mail	5 (1.3%)	4 (1.4%)	1 (1.0%)
Comments related to class content	10 (2.6%)	6 (2.0%)	4 (4.2%)
Requests to classmates for assistance	10 (2.6%)	0 (0.0%)	10 (10.4%)
Sharing of outside resources	25 (6.4%)	1 (0.3%)	24 (25.0%)
Comments about outside information	11 (2.8%)	0 (0.0%)	11 (11.5%)
Feedback regarding the listserv	15 (3.9%)	6 (2.0%)	9 (9.4%)
Feedback to the instructor(s)	16 (4.1%)	16 (5.5%)	0 (0.0%)
Acknowledgment of messages received	42 (10.8%)	35 (11.9%)	7 (7.3%)
Duplicate transmissions	17 (4.4%)	12 (4.1%)	5 (5.2%)
Totals*	388	292	96

*There were a total of 369 transmission, but several contained multiple messages, bringing the total number of messages to 388.

Table 1. Topics of student messages, as a percent of all messages, all e-mail messages, and all listserv messages.

or information received, and duplicate transmissions. Because 17 of the transmissions contained two or three clearly distinct topics, the total number of student messages coded was 388, nineteen more than the number of

transmissions. Details of the results of the content analysis are shown in the Table 1.

The most common message topic was requests for grades, accounting for 29% of individual e-mail messages and 20% of all messages. The most common topic for the listserv was sharing of outside resources; this category accounted for 25% of listserv messages. Discussion of class logistics was the second most common topic for both the listserv (16.6%) and e-mails (17%). Comments/discussion directly related to class content accounted for only 4.2% of listserv messages and 2.6% of all messages sent. Messages about problems using the listserv accounted for 6.7% of all messages, and messages about problems with e-mail accounted for 1.3%.

4. Discussion and Recommendations

Limitations of the study include the usual restrictions that apply to educational research: 1) the use of a convenience sample in defining the study population; 2) the use of pre-existing, non-equivalent groups without random assignment; and 3) the potential for bias on the part of both respondents and researchers. In addition, the effectiveness of the instructional use of computer-mediated communication may have been limited due to the relative lack of technological expertise and experience on the part of the instructor.

Consistent with the finding of other studies of computer-mediated communication in social work education (e.g., Folaron, 1995; Latting, 1994), problems reported by students included information overload, access problems, a division within the class between the "haves" and the "have-nots," and insurmountable technological challenges. Technology problems and lack of computer accessibility and were the most common negative comments. For example, one student wrote, "It took many tries to get on the listserv and it was inconvenient for me. I don't agree that e-mail should be required. Older students don't all have computers. It causes unnecessary stress and frustration."

Analysis of the sources of course-related electronic transmissions revealed that students attending at distant sites were significantly more likely than were campus students to use e-mail and the class listserv. This finding suggests that this technology is particularly appealing to those students who do not have regular face-to-face contact with their instructor. In other words, it was used to remedy some of the inherent short-comings of distance education rather than to augment learning. Students used the technology most often for practical reasons, such as dealing with logistics, requesting grade reports, or clarifying expectations related to assignments. In a classroom setting these issues might be handled by the instructor before or after class, or during a break. The students seldom used the listserv for extended discussions of course content or related topics; in fact, these purposes comprised less than 6% of all messages sent. At the same time 8% of student-initiated messages were about problems they were experiencing with the technology.

The instructor personally found the listserv helpful in exchanging information (e.g., expectations, lecture outlines, and information about assignments) with students, thus preserving more of the in-class time for instruction and learning. Negative consequences included the high volume of incoming electronic transmissions (including an additional 72 transmissions from "the system" and the university's listserv coordinator related to the course), and time spent trying to help students who had repeated difficulties in using electronic mail or the class listserv. As noted above, not all students had equal access, knowledge, or skills, and there were multiple software and server "glitches" that needed to be addressed. The author found that the availability of competent support staff was crucial to the successful use of these teaching tools.

The vast majority of student comments were very positive. One wrote, "[The listserv] is one of the greatest advantages that distance ed student have. It keeps us informed, allows [us] to assist each other, ask questions, and just to feel as part of the overall class. It may be frustrating at the beginning of the semester getting subscribed and so forth, but it is more than worth the trouble. The good definitely outweighs the bad." Another said, "I love having access to the listserv and e-mail. It makes communication with you much easier. It also helps to get the outlines before class. I feel I have an advantage over the other two students at my site because they have been unable to access the listserv and do not get all of the pertinent information. I share with them as much as I can! It is interesting to read all of the communication among the other students. I don't have much time to chat with them, but I do enjoy reading their communications." And a third wrote, "I do enjoy having the listserv with all of the benefits of interacting with fellow classmates and the instructor. This service helps those of us at distance ed sites feel like we are a part of the class. There are times when you feel very detached from the larger group in the distance education program. I am so thankful for the listserv." Another concluded, "Thank you for taking the time to communicate with us through listserv. I hope you pass the word around the all of the other professors so they will use it for their classes."

The author recommends that educators employ computer-mediated communication to enhance student instructor and student to student contact, particularly in distance education courses. Guided practice, along with simple written directions on the use of e-mail and the listserv, should be included in a general orientation session and/or at the first class meeting if at all possible. During the first several weeks of class, extra time and emotional support should be provided to students who experience technological difficulties (see Romiszowski & de Haas, 1989). Facilitating direct contact between students and the listserv coordinator (technician) may free the instructor from time-consuming and nonproductive exchanges regarding the intricacies and frequent technical malfunctions of computer-mediated communication. Instructors should develop specific expectations or course requirements related to CMC if they want students to use e-mail and/or a listserv to supplement other modes of learning.

Given the wide availability and growing familiarity with e-mail and listservs, computer-mediated communication presents an opportunity for effective and efficient contact with distance education students, both individually and as a class group.

5. References

D'Souza, P. V. (1991). The use of electronic mail as an instructional aid: An exploratory study. *Journal of Computer-Based Instruction, 18* (3), 106-110.

D'Souza, P. V. (1992). Electronic mail in academic settings: A multipurpose communication tool. *Educational Technology, 32*, (3) 22-25.

Dillion, C. (1989). Faculty rewards and instructional telecommunications: A view from the telecourse facility. *American Journal of Distance Education, 3*(2), 35-43.

Fast, M. (1995, April). *Interaction in technology: Mediated, multisite, foreign language instruction.* Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Flynn, J. P. (1987). Simulating policy processes through electronic mail. *Computers in Human Services, 2* (1/2), 13-26.

Folaron, G. (1995). Enhancing learning with e-mail. *Journal of Teaching in Social Work, 12* (1/2), 3-18.

Karayan, S. & Crowe, J. (1997). Student perceptions of electronic discussion groups. *T.H.E. Journal.*

Latting, J. K. (1994). Diffusion of computer-mediated communication in a graduate social work class: Lessons from "the class from hell." *Computers in Human Services, 10* (3), 21-45.

Mason, R. & Kaye, A. (Eds.) (1989). *Mindweave: Communication, computers & distance education.* NY: Pergamon Press.

McGiven, J. (1994). Designing the learning environment to meet the needs of distant students. *Journal of Technology and Learning, 27*(2), 52-57.

National Survey of Distance Education (1997). Available: www.nces.ed.gov/pubs98/distance/index.html.

Parker, A. (1997). *A distance education how-to manual: Recommendations from the field.* [On-line]. Available: www.webcom.com/journal/parker.html.

Rogers, E. M. (1983). *Diffusion of innovations* (3rd edition). New York: The Free Press.

Romiszowki, A. J. & de Haas, J. A. (1989). Computer-mediated communication for instruction: Using e-mail as a seminar. *Educational Technology, 29*, (10), 7-14.

Shale, D., & Garrison, R. (1990). Education and communication. In R. Garrison & D. Shale (Eds.), *Education at a distance* (pp. 23-39). Malabar, Florida: Krieger Publishing Company.

Sliwa, S. (1994). Re-engineering the learning process with information technology. *Academe, 80*, 8-12.

Wagner, E. (1993). Variables affecting distance educational program success. *Educational Technology, 33*, (4), 28-32.

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